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Abstract

ECONOMIC ASPECT OF ELECTRICITY AND INDUSTRIAL HEAT GENERATING REACTORS

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The economic advantage of electricity-generating nuclear stations decreases when their size decreases. However, when a counter-pressure turbine is joined on to a reactor and the residual heat can be properly used, it can be shown that fairly low capacity nuclear equipment may compete with conventional equipment under certain realistic enough conditions. The aim of this paper is to define these special conditions under which nuclear energy can be profitable. They are connected with the location and the general economic environment of the station, the pattern of the electricity and heat demands it must meet, the level of fuel and specific capital costs, nuclear and conventional. These conditions entail certain technical and economic specifications for the reactors used in this way otherwise they are unlikely to be competitive.

In addition, these results are referred to the potential steam and electricity market, which leads us to examine certain uses for the heat generated by double purpose power stations ; for example, to supply combined industrial plants, various types of town heating and for removal of salt from sea water.

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